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A CONDENSED SUMMARY OF THE FIELD-WORK
ANNUALLY ACCOMPLISHED BY THE OFFICERS OF
THE GEOLOGICAL SURVEY OF CANADA FROM ITS
COMMENCEMENT TO 1865.

By D. B. DOWLING.

The reports published during the above term are not in any sense annual reports and it is often difficult to follow the annual wandering of the members of the staff, especially during the compilation and publication of the report for 1863. The impression is very general that owing to the reduced grant the staff were employed during this interval mostly in the office on the compilation. The field-work was nevertheless carried on, although the results were absorbed in the published volumes. As the reports previous to 1863 are not available to many, this summary may be considered as a supplement to the preface of the latter volume.

The information is drawn from the reports from 1843 to 1866, the Life of Sir Wm. Logan by Prof. B. J. Harrington, and information from Dr. Robert Bell.

GEOLOGICAL SURVEY OF CANADA.

Before the union of the Provinces of Upper and Lower Canada, several petitions were sent to the Governor and notices of bills given in the Legislature of Upper Canada for the creation of a Geological Survey. A vote of £1,500 had been passed in 1841, but the selection of a geologist was not made until 1842, when W. E. Logan received the appointment. He arrived in August at the capital, Kingston, but finding the political situation very complex, he made several excursions at his own expense to various localities. A visit was made to Marmora to see the iron

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OF CANADA

mines of that region, and also to Brockville, Kingston Mills, Oliver's Ferry and Perth. The first report of this work of 1842 was only preliminary, and was afterwards incorporated in the report of 1843. Private business called him away to England in the autumn, and while there he secured the services of Alexander Murray as assistant.

1843.

Logan landed at Halifax on May 31st from England. He visited the Joggins on his way to Gaspé and made a complete section of the rocks there. He next visited Dorchester, Richibucto and Mirimichi and examined the coast for fifty miles from Bathurst, and also along the south side of the Bay of Chaleurs from Jacket River to Pockshaw. Then he worked between Cape Rosier and Paspebiac.

Murray arrived from England in May and called at Kingston, but commenced his work at Toronto by examining the country between the Credit and Don rivers. Then he went to Lake Simcoe and explored its shores. From Simcoe he went down the Severn River to Lake Huron and along the coast to Coldwater River and as far as Penetanguishene. Returning to the narrows of Lake Simcoe and to Barrie he struck west through Nottawasaga Township following the Niagara escarpment for a short distance but returned to the Lake Ontario shore, visiting Scarborough, Pickering and Whitby. Next from Oakville he traced the rocks west through Esquesing and back by Nelson and Trafalgar Townships. Subsequently he examined the country lying between the Grand River as far up as Paris, and Lake Ontario east to the Niagara River.

1844.

Logan and Murray left Montreal in May and proceeded to Gaspé arriving June 1st. They commenced work at Cape Rosier and continued to Cape Chat and then ascended the Chat River to the vicinity of the Notre Dame Mountains. Crossing to the Cascapedia River, their Indians built bark canoes, in which they descended to the mouth and coasted to Paspebiac. From there Murray was sent up the Bonaventure River, while Logan

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visited Port Daniel and returned to New Richmond. The coast was examined to Dalhousie and the Restigouche to Campbellton and thence to the mouth of the Matapedia. Up this stream they journeyed to Lake Matapedia and from thence by road the country was examined on foot.

1845.

Logan this year commenced the exploration of the Ottawa River. With J. McNaughton he surveyed not only the main river but several tributaries. He ascended the Rivière à la Graise and the Rivière du Nord some distance, the Mississippi River to Pakenham, the Madawaska to High Falls, and the Bonnechère to Jessups Rapids. From Portage du Fort he went around Calumet Island, and passing Coulouge Lake reached Pembroke. From the mouth of the Mattawa he made a visit to Lake Nipissing.

Murray spent the summer in Gaspé where he made surveys on the Matane, Ste. Anne and St. John rivers. Later in the year he collected fossils at Thetford, Ont.

1846.

The nucleus of a museum was this year moved from 40 St. James street to Little St. James street, Montreal.

Logan and Murray, with McNaughton as surveyor, formed a party to explore the north shore of Lake Superior. James Richardson is said to have accompanied this party.

De Rottermond, who had been acting as chemist, resigned.

Dennison Olmstead, Jr., received the appointment but owing to ill health could not assume the duties. He died early in the year.

T. Sterry Hunt, at the age of 21 years, received the appointment and came to Montreal the following February.

1847.

Logan devoted most of the season to work on the south side of the St. Lawrence, from Montreal and Lake Champlain to the Chaudière River.

Murray went to explore the northern shore of Lake Huron. He took four Indians from Montreal. Going by Detroit he took

steamer to Sault Ste. Marie and from there explored the north shore and the Manitoulin Islands to Manitowaning. He left La Cloche on August 16th to survey the French River to Lake Nipissing.

Hunt spent part of the summer with Logan, but afterwards went to Lachute and Grenville to collect fossils from the limestones of the Ottawa. He visited the falls on the Gatineau and examined the rocks there, and also the iron-ore at Hull. From there he went to Perth and examined the apatite deposits of North Burgess. The mineral, perthite, was analyzed by his pupil, Mr. Hartley. Mineral waters were collected from Caledonia Springs, Tuscarora, Charlotteville and Ancaster, Ont.

1848.

Logan spent only two months in the Eastern Townships when he determined to pay a visit to Lake Huron. There he examined the Bruce Mines, and with Marray ascended the Thessalon River before returning to the Eastern Townships.

Murray made a short excursion up the Grand River to Galt and then went to Goderich, examining the rocks on the Ashfield, Maitland and Bayfield rivers. Then he proceeded along the lake shore to Sarnia, and by Lake St. Clair to Windsor. Then from Detroit he took steamer to Sault Ste. Marie and joined Logan at Bruce Mines. Separating from Logan on September 5th, he went along the coast to Spanish River and ascended it for sixty miles. After examining the Wallace mining location he coasted the east coast of Georgian Bay to Penetanguishene and Collingwood.

Hunt visited mineral springs at St. Leon, Caxton, Champlain, Quebec, Varennes, Sabrevois and St. Benoit, Que.

1849.

Logan and Murray spent most of the summer in the Eastern Townships between the Chaudière and the Temiscouata road. As coal was supposed by some to occur near Murray Bay and Bay St. Paul, Que., and petitions for borings had been sent to the Legislature, Logan was asked to make an examination. This took some time, and he did not finish his work in the Eastern Townships.

Hunt accompanied Logan on the St. Francis and Chaudière rivers, but later visited portions of the west to collect soils. Mineral waters also occupied part of his attention.

1850.

The Provincial Act creating the Survey expired in March, and it was August before it was renewed.

Logan was part of the time in London superintending the collection of exhibits for the Exhibition, but later continued the examination of the gold-bearing gravels of the Chaudière.

Murray spent the summer in Western Ontario tracing the rocks of the Niagara escarpment.

Hunt was with Logan in the Chaudière district. In September he went to the north shore of the St. Lawrence below Quebec and then returned to Montreal to continue laboratory work.

Richardson collected fossils at Cornwall.

1851.

Logan went to England with the exhibit but returned in August, then, with Richardson, studied the outcrop of the Potsdam sandstone near the St. Lawrence.

Murray worked between the Ottawa and St. Lawrence rivers east of Gananoque. He made a short excursion to Enniskillen Township, in Western Ontario, to examine into the reports of mineral pitch or petroleum. He also collected fossils at Edwardstown and in Township Beverly, Wentworth, Ont.

Hunt spent some time with Murray in Eastern Ontario, and then went to the village of St. Nicholas, Kamouraska County, Que., to examine metamorphic rocks. Several short excursions were also made to collect mineral water.

1852.

The museum was moved in the spring from Little St. James street to St. Gabriel street, to a building formerly the residence of the Hon. Peter McGill.

Logan went to England but returned in May and began an examination of the north shore of the St. Lawrence between Montreal Island and Cape Tourmente.

Murray examined the country between Kingston and Lake Simcoe tracing the outcrop of the lower fossiliferous rocks.

Richardson assisted Logan between Montreal and Three Rivers.

Hunt continued his investigations of the mineral waters of Canada.

1853.

Logan examined the rocks at Grenville, Que.

Murray ascended the Muskoka River and descended by the Ottawa to Allumette Lake. Then he ascended the Bonnechère and passed from it to the Madawaska. Ascending the York or south-west branch he crossed several tributaries of the Ottonabee River and came out by Balsam Lake.

Hunt made analyses of dolomites and limestones and also continued his investigation of the mineral waters of Canada.

Richardson collected fossils at Stafford, Fitzroy and Ottawa, Ont.

1854.

Logan studied the rocks at Point Levis and collected material for the Exhibition at Paris.

Murray examined the Meganatawan River and commenced the survey of Lake Nipissing.

Hunt examined the triclinic feldspars of the Laurentian and also various ores.

Richardson and E. Billings collected fossils at Point Levis, Que.

1855.

Logan and Hunt went to Paris. A large collection of graptolites from Levis were taken to Prof. James Hall, at Albany, to be described.

Murray, with Prof. Hall, visited some of the fossil localities in Ontario. Then he went to Lake Nipissing by way of Lake Huron and surveyed the west coast from the outlet.

Hunt reported on iron-ores, cement, plumbago, peat, and the extraction of salt from sea-water.

Richardson and Billings collected fossils at Levis, Que., and Thetford, Ont.

1856.

Logan was knighted January 29th. He stayed most of the summer in Toronto trying to get another Act passed for the Survey.

Murray, with Mr. Brown as assistant, ascended the Sturgeon River from Lake Nipissing for 52 miles, then the Maskinongé for 30 miles, and crossed to the Wahnapiatae River and back to the French River. Another survey was made from the Wahnapiatae by the Whitefish River to Lake Huron.

Hunt continued laboratory work.

E. Billings was appointed Palæontologist on August 1st.

Richardson went in June by way of the Mingan Islands to Anticosti. At both places examinations were made, but the greater part of his time was spent at the latter place. Logan seems to have made him a short visit and collected fossils.

Capt. E. D. Ashe was employed on longitude determinations by means of the electric wire.

R. Barlow, one of the engineers employed on the construction of the Victoria Bridge, was appointed chief draughtsman June 1st.

S. Barlow was employed to assist his father at mapping, appointed Dec. 1st.

1857.

Logan was detained in Montreal at the meeting of the American Society for the Advancement of Science. He went to Grenville in October and spent a few weeks tracing the limestone bands of the Laurentian.

Murray, with J. Johnston as assistant, made a survey of the mouth of the French River and then went to the Bruce Mines and Echo Lake to study the copper deposits. A survey was made of Echo Lake and River, the northern part of Great Lake George, Little Lake George and Garden River. He also collected fossils at Galt and Woodstock with Billings.

Richardson, with Scott Barlow as assistant, surveyed the Magdalen River and the coast of Gaspé to Gaspé Bay. A traverse was made from Griffin Cove to Peninsula Cove in Gaspé Bay, then up Dartmouth River and to Grand Etang.

R. Bell was another of the party and collected objects of natural history on which he specially reported. After the St. Lawrence was reached, the party crossed over to the Saguenay and ascended to Lake St. John. Richardson and Barlow walked across to Bay St. Paul.

Billings ascended the Ottawa and Bonnechère rivers, collecting fossils. At Eganville he engaged J. McMullen, and with him visited Lake Clear in Sebastopol Township. He then returned and ascended the river to Golden Lake. The rocks of the fourth chute were examined while the water was shut off. Later he visited Galt, Woodstock and Port Colborne, Ont.

Hunt continued his chemical work on the dolomites of Canada and also investigations on fish manures.

Ashe reported on his longitude determinations.

1858.

Logan spent six months in the Grenville region and ascended the Rouge River to Iroquois Chute. In August he attended the meeting of the American Society for the Advancement of Science.

D'Urban accompanied Logan to Grenville and collected natural history specimens.

James Lowe was employed by Logan in the Grenville region.

Murray and Johnston, with S. Barlow as assistant, continued the examination of the copper deposits north of Lake Huron between the coast and Thessalon River. They connected their work to Echo Lake and around Rock Lake. They also examined the country and coast between Thessalon and Mississagui Rivers and surveyed the upper part of the latter.

Richardson, with Bell as assistant, explored the country between Rivière du Loup and Ste. Anne de Monts and along the coast to Marsouin River. He ascended the Ste. Anne River and crossing overland to the Barn-shaped Mountain he continued to Lake Matapedia and descended to Dalhousie, collecting fossils down to Patapedia. He ascended the Patapedia and crossed by the lakes of the Metis River to the St. Lawrence. Before returning to Montreal he visited several townships south of Rimouski and Trois Pistoles, Cacouna and Rivière du Loup.

Hunt continued work on the intrusive rocks of Montreal Mountain and the metamorphic Silurian rocks of the Eastern Townships.

1859.

Logan went to the Mingan Islands in June, and in July to Burlington and St. Alban's, Vermont. In September he was in Carleton Place, and afterwards visited Acton and the copper mines of the Eastern Townships.

Richardson accompanied Logan, but afterwards visited Perry, Lubec and Bangor, Maine. He also collected fossils in Western Ontario at Bosanquet and Thetford.

Murray was also employed most of the summer along the north side of the Ottawa River, taking latitude observations and making surveys in the vicinity of Grenville.

Bell was sent to explore the north shore of Lake Huron in the vicinity of the Manitoulin Islands, where he also collected fossils. Returning to Owen Sound he traced the outcrop of the Silurian along the Niagara escarpment to Lake Ontario.

Billings collected fossils near Montreal.

1860.

Logan continued making measurements at the copper mines in Acton and Milton Townships, Quebec. He records observations on the Island of Montreal, and visited Orleans Island and Point Levis in September.

Richardson made a long traverse along the north shore of the Gulf of St. Lawrence to the Straits of Belle Isle, from near the Mingan Islands.

Murray was instructed to make explorations west of Sault Ste. Marie, on the coast of Lake Superior. His assistant this year was R. Bell, who made many of the necessary surveys, such as a triangulation of Bachewanung Bay and Goulais Bay and River. A visit was paid to the Limestone Mountains near Lake Anne on the south shore. After Murray had sailed for Sarnia, the party under Bell coasted the north shore to Bruce Mines, calling at the Manitoulin Islands. and collecting fossils. From Collingwood, Bell ran several long lines of levels through

the townships south, and also established heights of points on the Blue Mountains. The surface geology of this region was also studied.

Lowe made surveys in Grenville and Chatham Townships, Quebec.

1861.

Logan was mostly in the Eastern Townships, but in November he visited Phillipsburgh and Swanton, Vermont, making many sections of the Phillipsburgh series, which were published in the report of 1863.

Richardson spent the season in Newfoundland on the west shore.

Murray visited several points along the escarpment near Owen Sound, and then went up the lake to Drummond Island, calling at Colpoys Bay, Gun Point and Flowerpot Island. The first part of September he was on Barr River and Lake George.

Bell worked out the distribution of the formations westward of the Niagara escarpment in the counties of Grey, Bruce, Huron, Wellington, Waterloo, Perth, Brant and Haldimand. He also collected specimens for the International Exhibition of 1862.

Lowe made surveys in the vicinity of Grenville, Quebec, in De Salabery Township.

1862.

Logan was a juror at the International Exhibition, London, but made a short trip in August to Point Levis and Island of Orleans. In September he paid a visit to Phillipsburgh and Swanton, Vt.

Murray traced the limestone band north of Lake Huron in the Huronian rocks east of the Mississagui River and upward to Wahcomatagaming Lake above Salter's base line to the contact with the Laurentian; also eastward along the Marsh River to Blind River and north-west to the narrows of Macomang Lake.

Richardson spent a short time in Newfoundland visiting Burnt Cape, Table Head and St. Paul Bay.

Bell surveyed the Dartmouth, York, Malbay and Grand rivers in Gaspé, Que., and also made large collections of fossils at Port Daniel and Gaspé Bay.

Lowe made surveys in the vicinity of Grenville, Que.

1863.

Logan visited Sherbrooke, Ascot and Point Levis in February and was in the vicinity of Montreal during June and July, but visited Point Levis and Orleans Island in August. In the fall he visited Albany, N. Y.

Richardson and Bell spent the summer in the Eastern Townships.

Murray, with S. Barlow as assistant, explored the country north of Lake Huron, surveying the following : Lakes Macomang and Tandanaidah on Blind River, and from Trout Lake to the Little White River.

Lowe made surveys in Ponsonby Township, Que.

T. C. Weston was collecting fossils with Richardson and visited Maine with Logan.

In autumn R. Bell was appointed Professor of Natural Science at Queen's College, Kingston.

1864.

Logan visited Quebec in May, making measurements and examinations at Point Levis. In July a short trip was made to the Eastern Townships. The publication of the Atlas to the report of 1863 obliged him to go to England, where he remained till spring.

Richardson spent the summer in the Eastern Townships.

Murray left early in the spring for his new field of labour in Newfoundland.

Weston was sent to Troy, N.Y., to collect fossils. He spent some time at Bald Mountain and Glen Falls.

Lowe made surveys in St. Jerome Township, Que.

1865.

Logan arrived in Canada early in June. He ascended the Petite Nation River in September, but was recalled to Montreal by his brother's death.

Richardson spent the summer in the Eastern Townships.

A. Michel, mining engineer, was engaged to explore the gold-bearing gravels and quartz veins of the Chaudiere River, Que.

Bell was employed during the summer on an exploration of Manitoulin Island. H. G. Vennor, accompanied him.

Thomas Macfarlane examined the north-east shore of Lake Superior and visited the copper mines of Portage Lake, Michigan.

Weston was sent to Anticosti and Silver Brook, Gaspé, to collect fossils.

Hunt made assays of gold-ores from the Chaudiere River, Que.

Lowe made surveys in Suffolk and Petite Nation Townships, Que.
